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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,175	06/30/2005	Masanori Shojiya	14434.85USWO	4887
52835	7590	05/23/2008	EXAMINER	
HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902			HOBAN, MATTHEW E	
			ART UNIT	PAPER NUMBER
			1793	
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			05/23/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/541,175	SHOJIYA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Matthew E. Hoban	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 June 2005.  
 2a) This action is **FINAL**.                  2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-8 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/29/2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Specification***

1. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The formula in claim 3 seems to be in error. Calculations were done for an example of the applicant's composition found in the specification, which fell under claims 1 and 3. This composition was Example 16. Values for r, xi, Ci and Zi, were obtained from the disclosure and the non patent literature provided by applicant. It was found that by using these values, figures for fm were obtained that differed wildly from those found by applicant. For example, in the specification it is stated that the fm value of Example 16 is 1.276; however when calculations were done based on values in the spec this fm value was found to be greater than 10.123. Therefore it seems that there is an error in this formula, since it doesn't arrive at values commensurate with the values found in Table 2 of the specification. This problem is also present in the specification. Calculations to determine the fm value of Example 16 are on the following page.

Example 16 → with Clus 1/2

$$\begin{aligned}
 & \text{SiO}_2 \rightarrow \text{SiPPu} \quad \text{TiO}_2 \rightarrow \text{SP}^2\text{N} \quad \text{Al}_2\text{O} \rightarrow \text{ZrSiO} \\
 & \text{values from} \\
 & \text{by ref. } \begin{cases} \text{C} = 1 \\ \text{Zr} = 4 \end{cases} \quad \begin{cases} \text{C} = 1 \\ \text{Zr} = 4 \end{cases} \quad \begin{cases} \text{C} = 2 \\ \text{Zr} = 1 \end{cases} \\
 & \text{values in} \\
 & \text{spec. } \rightarrow \begin{cases} \text{C} = .4 \\ \text{Zr} = .75 \\ \text{C} = 1.16 \end{cases} \\
 & 1.35 > \frac{x_1 \epsilon_1 z_1}{(x_1 + x_2)^2} = \frac{x_1 \epsilon_1 z_1}{(G_1 + G_2)^2} + \frac{x_2 \epsilon_2 z_2}{(G_2 + G_3)^2} \\
 & \quad (x_1 \epsilon_1 + x_2 \epsilon_2 + x_3 \epsilon_3)
 \end{aligned}$$

$$1.35 > (\epsilon_1)^2 + (\epsilon_2)^2 + (\epsilon_3)^2$$

$$\begin{aligned}
 & \frac{x_1 \epsilon_1 z_1}{(\epsilon_1)^2} \\
 & 1.35 > \frac{\frac{x_1 \epsilon_1 z_1}{(\epsilon_1)^2}}{(x_1 \epsilon_1 + x_2 \epsilon_2 + x_3 \epsilon_3)}
 \end{aligned}$$

$$\begin{aligned}
 & 1.35 > \frac{\frac{x_1 \epsilon_1 z_1}{(\epsilon_1)^2}}{(24)(24) + (24)(16) + 24(12)} \\
 & 1.35 > \frac{1.16}{1.16 + 1.16 + 1.16}
 \end{aligned}$$

$$\begin{aligned}
 & 1.35 > 40.223 \\
 & \epsilon_1 = \text{avg } 16 \approx 10.123
 \end{aligned}$$

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Zou in 6,294,490.

Zou teaches a crystallized glass suitable as a substrate for an information recording medium, where undulations can be formed on the glass through laser beam radiation (Abstract and column 23, Lines 50-55). Several examples of the glass composition are given in Tables 1-6, which read on the instant claims. Of all these compositions, the examiner only notes two, which don't read on instant claims 1 and 2; those being Examples 2-17 and 2-18. All other compositions fall within the scope of the instant claims 1 and 2. Furthermore, many of these same compositions, fall under the composition as denoted in claim 8, such as Examples 1.1, 1.6-1.16, 2.1-2.1, 2.12-2.17, and 3.14-3.16. As was previously stated, undulation and texturing can be added to these glasses through laser beam radiation (See Column 23, Lines 50-55).

**Regarding Claims 1-2:** Zou teaches compositions falling within the range of the instant claims in all examples except 2.17 and 2.18.

**Regarding claim 8:** Zou teaches compositions falling within the range of the instant claims in examples 1.1, 1.6-1.16, 2.1-2.1, 2.12-2.17, and 3.14-3.16. As stated by Zou texture can be added to these glasses through laser beam radiation.

***Claim Rejections - 35 USC § 102/103***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zou in 6,294,490.

Zou teaches a crystallized glass suitable as a substrate for an information recording medium, where undulations can be formed on the glass through laser beam radiation (Abstract and column 23, Lines 50-55). Several examples of the glass composition are given in Tables 1-6, which read on the instant claims. Of all these compositions, the

examiner only notes two, which don't read on instant claims 1 and 2; those being Examples 2-17 and 2-18. All other compositions fall within the scope of the instant claims 1 and 2. Furthermore, many of these same compositions, fall under the composition as denoted in claim 8, such as Examples 1.1, 1.6-1.16, 2.1-2.1, 2.12-2.17, and 3.14-3.16. As was previously stated, undulation and texturing can be added to these glasses through laser beam radiation (See Column 23, Lines 50-55). Zou is silent as to the parameters fm, Fm, alpha, Nbo, Msi, Tsi, and the number of Ti-O-Si bonds per SiO<sub>4</sub>; however the compositions of Zou are the same as those which are claimed, so the properties of Zou's glass, including all of the above mentioned parameters must be the same. Furthermore Zou's glass is suitable for laser texturing which is highly dependant on many of the above characteristics. Therefore, these characteristics must be inherent as there has been nothing made of record to show the contrary.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-2 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4 of copending Application No. 10/262864. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed towards the same glass composition. Although the copending application contains language to the laser processing, this is product by process language and covers essentially the same scope as that of the instant application. The ranges of the copending application substantially overlap those of the instant application to an extent that it would have been obvious to one of ordinary skill in the art to select from the overlapping ranges to make a suitable composition.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1-2 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 of copending Application No. 10/522046. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed towards the same glass composition. Although the copending application contains language to the laser processing, this is product by process language and covers essentially the same scope as that of the instant application. The ranges of the copending application substantially

overlap those of the instant application to an extent that it would have been obvious to one of ordinary skill in the art to select from the overlapping ranges to make a suitable composition.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Hoban whose telephone number is (571) 270-3585. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry A Lorengo/  
Supervisory Patent Examiner, Art Unit 1793

meh